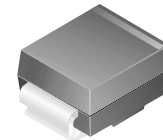


# S320

## 3A, 200V, Surface Mount Package Schottky Rectifier

### Features

- Low Profile, Mini Surface Mount Package: SMB / DO-214AA
- High Reverse Voltage:  $V_{RRM} = 200V$
- Low Power Loss, High Efficiency
- High Surge Current:  $I_{FSM} = 80A$
- RoHS 2002/95/EC Compliant



**SMB / DO-214AA**  
Color Band Denotes Cathode  
Mark: S320

### Absolute Maximum Ratings\* $T_A = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{RRM}$	Maximum Repetitive Peak Reverse Voltage	200	V
$V_{RMS}$	Maximum RMS Voltage	140	V
$V_{DC}$	Maximum DC Blocking Voltage	200	V
$I_{F(AV)}$	Maximum Average Forward Current	3.0	A
$I_{FSM}$	Non-repetitive Peak Forward Surge Current : 8.3ms Single Half-Sine-Wave superimposed on rated load (JECEC method)	80	A
$T_{STG}, T_J$	Operating Junction and Storage Temperature Range	-65 to +150	$^\circ C$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### Thermal Characteristics\*

Symbol	Parameter	Typ.	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	160	$^\circ C/W$
$\Psi_{JL}$	Junction to Lead Thermal Characteristics	20	$^\circ C/W$

\* Test condition - Test environment & PCB type: JESD51-2,3, Board size: 76.2x114.3mm,  
Pad size: 2.5x2.2mm, Trace width: 30mils

### Electrical Characteristics $T_A = 25^\circ C$ unless otherwise noted

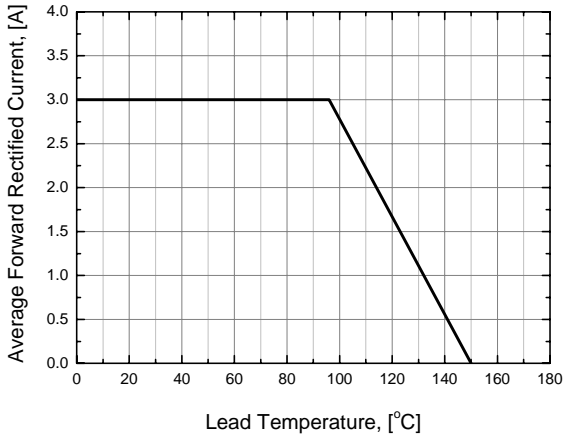
Symbol	Parameter	Test Condition	Typ.	Max.	Units
$V_F$	Forward Voltage*	@ 3.0A		0.9	V
$I_R$	DC Reverse Current	@ Rated $V_{DC}$ $T_A = 25^\circ C$ $T_A = 100^\circ C$		7 120	$\mu A$ $\mu A$
trr	Reverse recovery time**	$I_F=0.5A, I_R=1A, I_{RR}=0.25A$	14		ns
trr	Reverse recovery time	$I_F=1A, V_R=-30V,$ $I_{RR}=10\% I_{RM}, di/dt=50A/\mu s$	30		ns

\* Pulse Test with  $PW = 250\mu sec$ , 2% Duty Cycle.

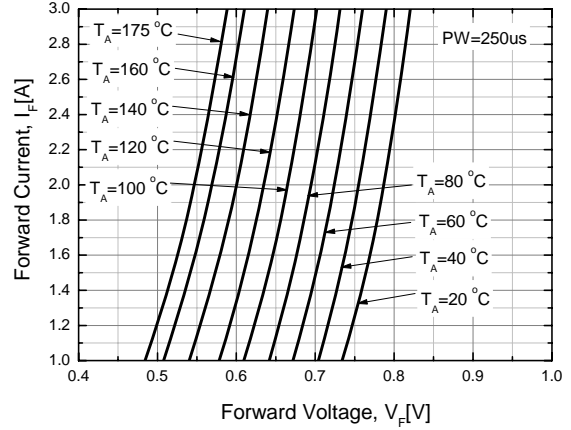
\*\*  $I_R < 1A$  due to fast reverse recovery

## Typical Performance Characteristics

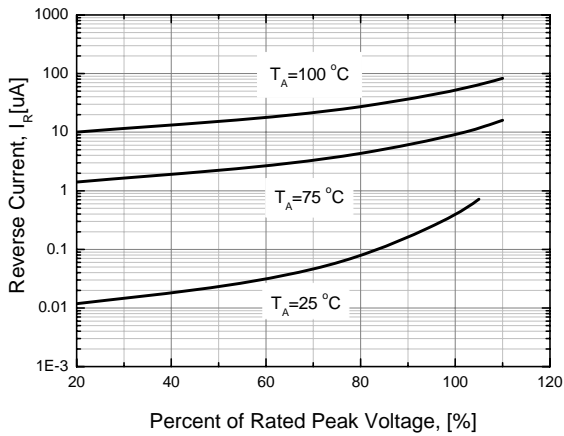
**Figure 1. DC Forward Current Derating Curve**



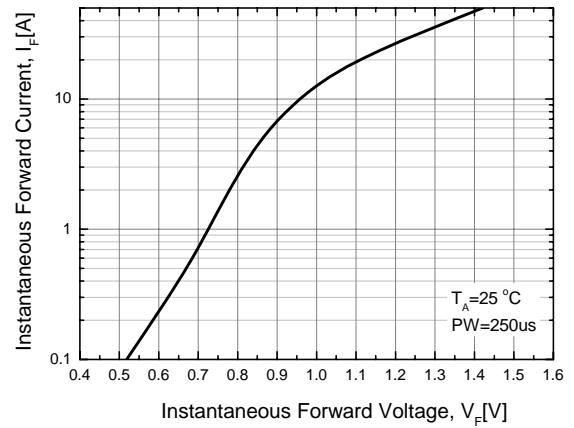
**Figure 2. Forward Current Characteristics**



**Figure 3. Typical Reverse Characteristics**







**Figure 4. Typical Instantaneous Forward Characteristic**





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| BitSiC™  | GreenBridge™                                   | QFET®  | TinyBuck™   |
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| CROSSVOLT™   | GTO™   |  ™                | TinyPower™  |
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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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